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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/811,234	03/03/97	SUGIMOTO	H 35.C10048-CI

005514
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MMC2/0523

EXAMINER

HALLACHER, C

ART UNIT PAPER NUMBER

2853

DATE MAILED: 05/23/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/811,234

Applicant(s)

SUGIMOTO ET AL.

Examiner

Craig A Hallacher

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14,17-22,25-30,33-35 and 37-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,17-22,25-30,33-35 and 37-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☒ received in Application No. (Series Code / Serial Number) 08/248,513.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-14, 17-22, 25-30 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (4,860,026) in view of Sugimoto et al. (5,477,248).

Matsumoto et al. discloses an ink-jet recording apparatus for forming an image on a recording medium comprising a plurality of ink discharge means and a plurality of ink discharge openings and containing a plurality of inks, wherein the plurality of inks are discharged from the plurality of ink discharge openings by driving the ink discharge means, each ink having a penetrability, a dye density and a color; said plural ink discharge openings corresponding to a plurality of inks with different dye densities and a control means for performing gradational recording by controlling discharge of each of the plurality of inks with different dye densities

based on inputted image data, the image data being data representing a density level. However, Matsumoto et al. does not disclose that penetrabilities of inks having different dye densities are different and that the plurality of inks contain different component ratios of a surfactant.

Sugimoto et al. discloses an ink-jet recording apparatus in which inks of different density have different component ratios of a surfactant in order to provide different penetrabilities. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide inks of different densities with a different component ratios of a surfactant resulting in a different penetrability, as taught by Sugimoto et al., in the ink-jet printer of Matsumoto et al., in order to have sharp images free from formation of inadequate feathering at boundaries. Although Sugimoto et al. does not disclose that inks of the same color having different penetrabilities, modifying Matsumoto et al. in view of Sugimoto et al. would provide this feature. Sugimoto et al. discloses that inks of different densities should having different penetrabilities in order to have a boundary with proper feathering. In order to have this boundary feature realized in Matsumoto et al., the teaching of Sugimoto et al. would suggest that the thinner ink (i.e. lower density ink) would have a higher penetrability than the thicker ink.

4. Claims 37-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Sugimoto et al. and Sekiya (JP 1-242256).

Matsumoto et al. discloses an ink-jet recording apparatus for forming an image on a recording medium comprising a plurality of ink discharge means and a plurality of ink discharge openings and containing a plurality of inks, wherein the plurality of inks are discharged from the plurality of ink discharge openings by driving the ink discharge means, each ink having a

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penetrability, a dye density and a color; said plural ink discharge openings corresponding to a plurality of inks with different dye densities and a control means for performing gradational recording by controlling discharge of each of the plurality of inks with different dye densities based on inputted image data, the image data being data representing a density level. However, Matsumoto et al. does not disclose that penetrabilities of inks having different dye densities are different and that the plurality of inks contain different component ratios of a surfactant. Matsumoto et al. also does not disclose that plural inks are divided and held in the same container. Sugimoto et al. discloses an ink-jet recording apparatus in which inks of different density have different component ratios of a surfactant in order to provide different penetrabilities. Sekiya discloses an ink-jet recording apparatus having plural inks that are divided and held in the same container. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide inks of different densities with a different component ratios of a surfactant resulting in a different penetrability, as taught by Sugimoto et al., and to provide the inks in a single container, as taught by Sekiya, in the ink-jet printer of Matsumoto et al., in order to have sharp images free from formation of inadequate feathering at boundaries. Although Sugimoto et al. does not disclose that inks of the same color having different penetrabilities, modifying Matsumoto et al. in view of Sugimoto et al. would provide this feature. Sugimoto et al. discloses that inks of different densities should having different penetrabilities in order to have a boundary with proper feathering. In order to have this boundary feature realized in Matsumoto et al., the teaching of Sugimoto et al. would suggest that the thinner ink (i.e. lower density ink) would have a higher penetrability than the thicker ink.

Response to Arguments

5. Applicant's arguments filed 3/13/00 have been fully considered but they are not persuasive. Applicant's argument with regards to the 35 U.S.C. 112, first paragraph, rejection is deemed to be persuasive and the rejection has been withdrawn. Applicant's argument that claims are allowable over the prior art of record because the art does not disclose inks of the same color but different density have different penetrabilities is not deemed to be persuasive because Matsumoto et al. in view of Sugimoto et al. does provide this feature. Sugimoto et al. discloses that the penetrabilities of inks of different densities are different in order to have a nice border region. Providing the teachings of Sugimoto et al. into Matsumoto et al. would provide inks of the same color having different densities would have different penetrabilities in order to produce a nice border between the thin ink and the thick ink.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takizawa et al. (5,623,294) and Suga et al. (5,734,403) disclose that it is known to add surfactants to inks in order to have nice borders between inks of different colors.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A Hallacher whose telephone number is (703)308-0516. The examiner can normally be reached on M-F (8:30-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, Jr. can be reached on (703)308-3126. The fax phone numbers for the


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organization where this application or proceeding is assigned are (703)305-3432 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



C.A.H.
May 16, 2000



John Barlow
Supervisory Patent Examiner
Technology Center 2800